

Docket No. MWH-0029US

Amendments to Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Claims 1-8 (canceled)

Claim 9 (withdrawn) A method for detecting which $[[5']]$ β_2 AR 5'LC peptide variant is expressed in an individual, which comprises contacting a biological sample from the individual with a first antibody that is specifically immunoreactive with a first 5'LC peptide variant and detecting a complex formed between the first antibody and the first 5'LC peptide variant.

Claim 10 (withdrawn) The method of claim 9, further comprising contacting the biological sample with a second antibody that is specifically immunoreactive with the second 5'LC peptide variant and detecting a complex formed between the second antibody and the second 5'LC peptide variant.

Claim 11 (canceled)

Claim 12 (withdrawn) The method of claim 10, wherein the additional polymorphic sites are selected from the group consisting of -20PS, +46PS, +79PS, +100PS and +491PS.

Claims 13-15 (canceled)

Claim 16 (withdrawn) A method for haplotyping the β_2 -adrenergic receptor (β_2 AR) gene in an individual, comprising

- (a) isolating from the individual a nucleic acid molecule containing only one of the two copies of the β_2 AR gene, or a fragment thereof, that is present in the individual; and
- (b) determining in that copy the identity of the nucleotide at the 5'LC PS and at one or more additional polymorphic sites.

Claim 17 (withdrawn) The method of claim 16, wherein the additional polymorphic sites are selected from the group consisting of -20PS, +46PS, +79PS, +100PS and +491PS.

Claim 18 (withdrawn) A method for predicting an individual's genotype for at least one coding block polymorphic site (cb PS) in the β_2 -adrenergic receptor gene, which comprises determining the individual's genotype for the 5' leader cistron polymorphic site (5'LC PS) and assigning a genotype for the cb PS which is consistent with the individual's 5'LC PS genotype, wherein the cb PS is selected from the group consisting of +46PS and +79PS.

Claim 19 (withdrawn) A method for determining the frequency of a β_2 AR genotype or a β_2 AR haplotype in a population, comprising

- (a) determining the β_2 AR genotype or the β_2 AR haplotype pair for each member of the population and
- (b) calculating the frequency any particular β_2 AR genotype or β_2 AR haplotype is found in the population.

Claim 20 (withdrawn) The method of claim 19, wherein the population is a trait population and the trait is selected from the group consisting of congestive heart failure, ischemic heart disease arrhythmia, hypertension, migraine asthma, chronic obstructive pulmonary disease (COPD), anaphylaxis, obesity, diabetes and premature labor.

Claim 21 (withdrawn) A method for identifying an association between a polymorphism in the β_2 AR 5' leader cistron and a trait, which comprises comparing the frequency of the polymorphism in a population exhibiting the trait with the frequency of the polymorphism in a reference population, wherein a higher frequency of the polymorphism in the trait population than in the reference population indicates the polymorphism is associated with the trait.

Claim 22 (canceled)

Claim 23 (withdrawn) The method of claim 21, wherein the trait is response to an agonist or antagonist of β_2 AR.

Claims 24-25 (canceled)

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Claim 26 (withdrawn) A method for predicting a patient's bronchodilating response to an agonist of β_2 AR, which comprises determining the patient's genotype for the β_2 AR 5'LC polymorphic site, wherein a patient who is homozygous T at this site is unlikely to exhibit a bronchodilating response to the agonist and a patient who contains a C at this site is likely to exhibit a bronchodilating response against the agonist.

Claim 27 (withdrawn) The method of claim 26, wherein the agonist is albuterol.

Claim 28 (withdrawn) The method of claim 18, wherein if the genotype of the 5'LC PS is cytosine then the genotype of +46PS is guanine, and if the genotype of 5'LC PS is thymine then the genotype of +46PS is adenine.

Claim 29 (withdrawn) The method of claim 18, wherein if the genotype of the 5'LC PS is cytosine then the genotype of +79PS is guanine, and if the genotype of 5'LC PS is thymine then the genotype of +79PS is cytosine.

Claim 30 (new) A method for predicting a patient's bronchodilating response to an agonist of β_2 AR, which comprises determining the patient's genotype for the β_2 AR 5'LC polymorphic site, wherein a patient who is homozygous T at this site is unlikely to exhibit a bronchodilating response to the agonist and a patient who contains a C at this site is likely to exhibit a bronchodilating response against the agonist.

Claim 31 (new) The method of claim 30, wherein the agonist is albuterol.